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THE VILLA BARBERINI.

An Italian paper states that an archaeological discovery has been made at the Villa Barberini, near Castel Gondolfo, on the spot where stood the palace of the Emperor Domitian. Two fragments have been exposed of a cornice in white marble, having together a length of 16 ft., a width of 39 in., and a height of 20 in. They are in a good state of preservation, and the design and the sculpture are said to be most artistic. The rose ornaments, the borders, the brackets of acanthus-leaves, the scrolls, the foliage, and all the others portions of the entablature are in relief. On the upper portion, where the marble had not been hewn, there are the joints in iron and lead of the objects which were superimposed.

MOVABLE FLANGE FOR DOORS AND WINDOWS.

Under the (rather formidable) name of "plinthe-bourrelet mobile indépendant", Bénard, 10, Rue Oudinot, Paris, manufactures a very neat and elegant substitute for sandbags, list, and other old-fashioned appliances for the exclusion of draughts and damp — a strip of wood covered on the outer side with cloth, and held in its place by a couple of gilt studs. It forms an airtight joint, and, once fixed, permits the doors or windows to be opened or shut as before without risk of displacement. *(Les Mondes.)*

THE CATACOMBS OF ROME.

Between 731 and 816 no less than twenty-eight cemeteries were restored by the Popes. Cemetery is the old name for catacomb, which is entirely a modern or Mediæval name originating in a misconception. The earliest Christian burial-place was under, or near to, the church of J. Sebastian, which was called "The Catacomb" because it was Kata-cumba, under the hill or comb on which the great tomb of Cecilia Metalla stands. Twenty-eight catacombs were restored in the eight and the beginning of the ninth century. The chief things to be restored in those burial vaults with their corridors or streets which are for the most part cut out of the tufa rock, were necessarily the paintings, and therefore we find a great proportion of them to belong to that period. Another considerable part of these paintings are of the time of Pope John I A. D. 523—526, who is recorded to have made the catacombs of S. S. Peter and Adactus, Nereus, and Achilleus, and Saturninus, and restored that of Priscilla. *(The Builder.)*

ARTIFICIAL COOLING OF LARGE VOLUMES OF AIR.

MM. Mignon and Rouart have communicated to the French Academy of Sciences the results of some experiments in cooling air by contact with the surfaces of refrigeratory liquids, together with an account of the practical application by them, at the Royal Candle Works, Amsterdam, of the principle thence deduced.

The problem was to maintain, throughout the hot weather, a uniform temperature of about 12° C. (53° Fahr.) in one of the buildings of the Royal Candle Factory at Amsterdam. This building is 50·20 m. (166 ft.) long by 14·54 m. (48 ft.) wide, and 4·18 m. (14 ft.) high; and into it are daily introduced some 15,000 kilogs. of oil, at a temperature of 60° C., for cristallization into stearic acid.

As a refrigerating mixture, a concentrated solution of chloride of lime prepared with ammonia solution was used, which gave 60,000 negative calories per hour. The air was set in motion by a fan, at the rate of 20,000 cubic metres per hour, the capacity of the building being 3051 cubic metres. For a refrigerating apparatus, a large cylinder was employed, which was insulated as much as possible, and contained a number of transverse plates revolving with a central (vertical) axis between discs projecting from the cylinder walls. The refrigerating mixture was poured on the top-

most plate, and, being carried by the centrifugal force of its rotation against the cylinder walls, was prevented from rising by the projecting discs, and so forced down to the plate next below, where the operation was repeated. In this way the rotation of the axis kept the interior of the cylinder constantly filled with a finely comminuted cascade of the cooling mixture. The air drawn from the heated building by the fan was driven through the cylinder, re-entering the building from above. From the 20,000 cubic metres or 26,000 kilogs. of air driven through it hourly, the apparatus abstracted $26,000 \times 0,23 \times 10 = 59,800$ calories. Practically the results were found perfectly satisfactory. During the first fortnight of last September, when the weather was exceptionally hot, the temperature of the huge building was kept steadily between 12° and 13° C.

It is noted, that the chloride of lime becomes impoverished by use to some extent, owing to the absorption of a large amount of watery vapour from the heated air — a result that may be found of considerable importance in certain industrial processes.

(The Practical Magazine from Comptes Rendus.)

THE BAPTISTERY AT RAVENNA.

The attention of the Gouvernement has been called to the condition of the Baptistry of Ravenna, a monument of high importance as regards the history of art. According to the Times correspondent, the mosaics of the fifth century it contains are rapidly perishing, and, in fact, the building itself is threatening ruin in consequence of the damage it has received in past times, and the gradually increasing injury it is continually suffering from the damp, caused by the very low level on which it stands. With a view to saving the Baptistry from further injury, a project has been prepared by the Commendatore Lanciani, chief of the Department of Civil Engineers at Ravenna, which has received the approval of the Minister of Public Works. It has proposed, after all the requisite precautions have been taken, to raise the edifice bodily to the modern level by means of a number of great screws worked simultaneously, new foundations to be built beneath it. This will be the first occasion of this means of raising buildings, — common in the United States, — being put into operation in connexion with an ancient edifice.

IRON WASTE.

Efforts have recently been made in America, it is said with success, to introduce the process long since turned to good account at Sechshaus near Vienna. Iron and tin-plate scraps are reconverted into valuable merchantable products. From all tin-plate and soldered articles the tin is first separated, and the iron is subsequently melted into a very high quality of metal. In the course of the process various by-products are obtained, which are said to pay all working expenses, so that the value of the tin and iron is all clear profit. *(The Builder.)*

COLD ENAMEL.

Mix 1 part acetate of ammonia in 6 parts of hot water, and dissolve therein 3 parts of bleached shellac. Add some mineral colour to give the desired tint, and pour over the surface to be coated. Dry over a slow fire. Or dissolve gum-mastic in lard-oil rub down some mineral colour therein, and beat up the whole to the consistency of honey with a metal rod. For use, the composition is heated quickly to melting, spread over the required surface, and when dry polished with grease and tripoli powder.

(Deutsch-Amerikanische Gewerbe-Zeitung.)